## REPRESENTATIVE BUT NOT LIMITING CLAIMS:

1. An IC card comprising a substrate, said substrate having a semiconductor integrated circuit and one or more optical data deformations incorporated therein that are representative of digital data.

2. The IC card of claim 1 wherein one or more of said optical deformations are associated with a optical state change security material.

3. The IC card of claim 2 wherein the optical state change security material is a transient optical state change security material.

4. The IC card of claim 3 wherein the transient optical state change material is associated with the optical data deformations in such a manner as to provide two optical data reads when the optical data deformations are read by an optical reader.

5. The IC card of claim 4 wherein each of the optical data reads is indicative of valid data.

6. The IC card of claim 4 wherein one optical data read is indicative of valid data, while the other optical data read is indicative of invalid data.

7. The IC card of claim 4 wherein each of the optical data reads in invalid.

8. The IC card of claim 4 wherein the optical data deformations comprise pits and lands.

9. The IC card of claim 8 wherein said pits comprise pits of two distinctly different depths.

10. The IC card of claim 8 wherein one or more pits acts as a Fabry-Perot type interferometers.

11. A method for authenticating an item comprising the steps of: (a) detecting on an item, or an substrate associated with the item, a transient optical state change material, (b) determining the locations where which such materials are located on the authentic item,

or substrate associated with the item, and (c) declaring the item as authentic when such detection occurs and the transient optical state change material is found at the same locations as an authentic item.

12. The method of claim 11 wherein the transient optical state change material is associated with an optical data deformation in a manner to change the optical read of such deformation between two or more states when such deformations are read by an optical reader.